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REFERENCES:

ATTACHMENT TO L-3056  
02 MAY 1967  
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POST-STRIKE ( [REDACTED]  
IRON AND STEEL COMBINE  
THAI NGUYEN, NORTH VIETNAM  
2133N 10552E  
[REDACTED]

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1. SIGNIFICANCE:

THIS BRIEFING BOARD DEPICTS THE EFFECTS OF THE FIRST U.S. AIR STRIKE AGAINST THE IRON AND STEEL COMBINE AT THAI NGUYEN.

2. LOCATION:

THE IRON AND STEEL COMBINE IS LOCATED APPROXIMATELY THREE NM SOUTH-SOUTHEAST OF THAI NGUYEN.

3. COLLATERAL:

THE COMPLEX IS AN INCOMPLETE COKE, IRON, AND STEEL COMPLEX WITH NINE FUNCTIONAL AREAS CONTAINING ORE SINTERING FACILITIES, ONE COKE OVEN BATTERY, A COKE BY-PRODUCTS SECTION, THREE BLAST FURNACES, A TWO-STACK OPEN HEARTH FURNACE BUILDING, A ROLLING MILL UNDER CONSTRUCTION, A FABRICATION AREA, AND STORAGE/SUPPORT AND ADMINISTRATION AREAS. CONSTRUCTION WAS BEGUN ON THIS PLANT IN 1960 AND HAS CONTINUED UNTIL THE PRESENT TIME.<sup>1</sup>

THE DEVELOPMENT OF NORTH VIETNAM'S SMALL IRON AND STEEL INDUSTRY IS BEING FINANCED LARGELY BY COMMUNIST CHINA. UNDER AN AGREEMENT SIGNED BY THE LATTER COUNTRY AND NORTH VIETNAM IN FEBRUARY 1959, A CHINESE CREDIT OF U.S. \$75 MILLION WAS TO BE USED TO FINANCE CONSTRUCTION OF SEVERAL INDUSTRIAL PLANTS, INCLUDING STARTING THE FIRST STAGE OF CONSTRUCTION AT THE THAI NGUYEN IRON AND STEEL PLANT. UNDER SUBSEQUENT CREDITS, WHICH WERE TO BE USED FROM 1961 TO 1967, CHINA IS

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SCHEDULED TO PROVIDE THE NECESSARY AID TO INSURE AN OUTPUT OF 100,000 TONS OF CRUDE STEEL ANNUALLY AT THAI NGUYEN BY THE END OF 1965. THE NORTH VIETNAMESE ESTIMATE THAT THE TOTAL INVESTMENT FOR THE ENTIRE COMPLEX WILL AMOUNT TO ABOUT U.S. \$160 MILLION.

UNDER THE CREDITS, CHINA HAS ALSO PROVIDED EXTENSIVE ASSISTANCE IN ENGINEERING AND EQUIPMENT FOR THE THAI NGUYEN COMPLEX AND HAS FURNISHED A LARGE NUMBER OF TECHNICIANS TO INSTALL EQUIPMENT, MANAGE OPERATIONS, AND TRAIN INDIGENOUS PERSONNEL. ALSO, NORTH VIETNAMESE OPERATING PERSONNEL ARE KNOWN TO HAVE BEEN RECEIVING TRAINING IN CHINESE STEEL MILLS IN 1963-64.

THE PLANNED ANNUAL OUTPUT OF CRUDE STEEL FOR THE PLANT, PROBABLY TO BE PRODUCED IN SIDE-BLOWN CONVERTERS, IS APPROXIMATELY 100,000 TONS BY 1966 AND 200,000 TONS BY 1970. PRESS REPORTS CONCERNING THE OPERATION OF SMALL CHINESE PLANTS LATE IN THE 1950'S INDICATE THAT IF THAI NGUYEN IS EQUIPPED WITH SIDE-BLOWN CONVERTERS, THE CRUDE STEEL PRODUCED PROBABLY WILL BE BOTH RELATIVELY HIGH IN COST AND POOR IN QUALITY. SUFFICIENT CASTING AND ROLLING MILL CAPACITY IS PLANNED TO ALLOW CONVERSION OF CRUDE STEEL INTO USABLE FINISHED STEEL PRODUCTS INCLUDING WIRE, ROD, STRUCTURAL SHAPES, AND ULTIMATELY THE COMMUNISTS CLAIM, STEEL SHEET AND PIPE.<sup>2</sup>

4. BACKGROUND:

PHOTOGRAPHY OF MARCH 1964 REVEALED THE PLANT TO BE APPROXIMATELY

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FIFTY PERCENT COMPLETE. AS OF JULY 1965 THE COMPLEX APPEARED ESSENTIALLY COMPLETE WITH THE EXCEPTION OF THE ROLLING MILL AND THE OPEN HEARTH FURNACE BUILDING. PHOTOGRAPHIC COVERAGE BETWEEN JULY 1965 AND MARCH 1966 REVEALED THAT THE OPEN HEARTH FURNACE BUILDING WAS COMPLETE AND THAT A SMALL AMOUNT OF FURTHER CONSTRUCTION HAD TAKEN PLACE ON THE ROLLING MILL.

5. NOTE:

IN JANUARY 1967, PHOTOGRAPHY REVEALED BARGES BEING FABRICATED AT THE LANG LAU BARGE CONSTRUCTION YARD [REDACTED] LOCATED ON THE NORTH EDGE OF THE IRON AND STEEL COMBINE, AND AT ANOTHER AREA WITHIN THE COMBINE.

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6. STRIKE DATA:

STRIKE DATA REPORTS THAT THE THAI NGUYEN IRON AND STEEL COMBINE WAS FIRST ATTACKED BY USAF AIRCRAFT ON 10 MARCH 1967. TWENTY-EIGHT F-105'S AND EIGHT F-4C'S TOOK PART IN THE RAID, AND ORDNANCE EXPENDED CONSISTED OF THIRTY-TWO CBU-24 AND ONE HUNDRED AND EIGHTY-FIVE 750-POUND GENERAL PURPOSE BOMBS. SINCE THIS DATE, SEVERAL ADDITIONAL STRIKES HAVE BEEN EFFECTED AGAINST THIS COMPLEX.

THE THAI NGUYEN RAILROAD STATION YARDS AND SHOPS [REDACTED] HAD BEEN STRUCK PREVIOUSLY IN APRIL AND MAY OF 1966.

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7. MISSION READOUTS:

PRE-STRIKE PHOTOGRAPHY [REDACTED]

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REVEALS THE THAI NGUYEN IRON AND STEEL COMBINE TO BE CAPABLE OF LIMITED PRODUCTION, CONFINED CHIEFLY TO THE PRODUCTION OF PIG IRON AND THE FABRICATION OF FINISHED STEEL PRODUCTS INCLUDING POL STORAGE TANKS AND BRIDGE TRUSSES. NO STEEL PRODUCTION IS APPARENT ALTHOUGH AN OPEN HEARTH FURNACE BUILDING HAS BEEN IDENTIFIED AND A PROBABLE ROLLING MILL IS OBSERVED UNDER CONSTRUCTION. POSSIBLE LIMITED COLD STEEL ROLLING AND FABRICATION ARE ACCOMPLISHED AT THE FOUNDRY AND FABRICATION AREAS OF THE COMBINE.

AT THIS TIME IDENTIFIED COMPONENTS OF THE COMBINE INCLUDE:

- A. A BLAST FURNACE AREA WITH STOCK TRESTLE AND THREE FURNACES.
- B. AN OPEN HEARTH AREA CONTAINING ONE LARGE OPEN HEARTH FURNACE BUILDING WITH TWO STACKS.
- C. A COAL AND ORE PREPARATION AREA CONTAINING A COAL PREPARATION BUILDING, COKING OVENS, A COKE BY-PRODUCTS PLANT AND AN ORE SINTERING PLANT.
- D. A STEAM PLANT WITH OVERHEAD PIPING, INCOMPLETE BUT CONNECTED TO THE BLAST FURNACE AREA AND THE OPEN HEARTH BUILDING.
- E. A ROLLING MILL AND COMPRESSOR BUILDING UNDER CONSTRUCTION.
- F. A FABRICATION AND FOUNDRY AREA WITH THREE MONITOR-ROOF BUILDINGS AND EIGHT SMALLER SHOPS.
- G. A FIRE BRICK PLANT WITH ONE LONG PRODUCTION BUILDING AND SEVERAL ASSOCIATED RAW MATERIAL TREATMENT BUILDINGS.

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H. A RAIL CAR AND LOCOMOTIVE REPAIR SHOP INCLUDING TWO MONITOR-ROOF BUILDINGS.

I. AN ADMINISTRATIVE AREA CONTAINING THREE MULTISTORY BUILDINGS AND SEVERAL ASSOCIATED SUPPORT BUILDINGS.

J. A WAREHOUSE AND TRANSHIPMENT AREA AT THE WESTERN EDGE OF THE COMPLEX CONSISTING OF A TWENTY-FOUR TRACK RAIL YARD (THAI NGUYEN RAILROAD STATION YARDS AND SHOPS, [REDACTED] TWENTY LARGE RAIL-SERVED WAREHOUSES, AND TWELVE SMALL STORAGE BUILDINGS.

K. A COAL/ORE STORAGE AREA WITH AN ASSOCIATED CONVEYOR SYSTEM CONNECTING WITH THE COAL AND ORE PROCESSING AND TREATMENT BUILDINGS.

L. A TERMINAL SUBSTATION CONNECTED TO THE THAI NGUYEN THERMAL POWER PLANT [REDACTED] APPROXIMATELY FIVE NM NORTHWEST OF THE COMBINE.

M. A WATER TREATMENT FACILITY WITH A PUMPHOUSE, SETTLING POND, AND WATER STORAGE TANK.

NUMEROUS MISCELLANEOUS SMALL STORAGE/SUPPORT/PROCESSING BUILDINGS ARE NOTED THROUGHOUT THE COMPLEX.

THE PLANT IS SERVED BY ROUTE 3 AND THE HA NOI/THAI NGUYEN RAIL LINE, AS WELL AS THE KEP/THAI NGUYEN RAIL LINE WHICH CONNECTS WITH THE HA NOI/PING-HSIANG RAIL LINE.

POST-STRIKE PHOTOGRAPHY [REDACTED] REVEALS THAT STRIKE DAMAGE WAS NOT SUFFICIENT TO SUBSTANTIALLY HINDER PRODUCTION.

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NO DAMAGE WAS APPARENT TO THE BLAST FURNACE, COKE OVEN, OR COKE BY-PRODUCTS AREAS. THE CHIEF DAMAGE RESULTING FROM THIS RAID IS APPARENT IN THE AREA OF THE ROLLING MILL UNDER CONSTRUCTION AND THE OPEN HEARTH BUILDING (PROBABLY PRESENTLY BEING USED AS A FABRICATION BUILDING), WITH MINOR DAMAGE TO THE FOUNDRY/FABRICATION AREA AND THE FIRE BRICK PLANT.

THE FOLLOWING IS AN ASSESSMENT OF THE STRIKE DAMAGE BY FUNCTIONAL AREA:

A. THE OPEN HEARTH FURNACE BUILDING HAS TWO AREAS OF POSSIBLE STRUCTURAL AND ROOF DAMAGE WITH PROBABLE DAMAGE TO THE EASTERN SIDE OF THE BUILDING.

B. THE ROLLING MILL UNDER CONSTRUCTION HAS AT LEAST THREE AREAS OF SUBSTANTIAL STRUCTURAL DAMAGE AND SEVERAL ADDITIONAL AREAS OF PROBABLE STRUCTURAL AND SUPERFICIAL DAMAGE.

C. THE SINTERING PLANT HAS SUSTAINED MODERATE STRUCTURAL DAMAGE TO THE WESTERN EXTENSION OF THE ORE PROCESSING BUILDING.

D. PROBABLE LIGHT-TO-MODERATE STRUCTURAL DAMAGE TO THE STEAM PLANT HAS RESULTED FROM ADJACENT CRATERING. ELEVATED PIPING FROM THE STEAM PLANT IS BROKEN IN AT LEAST THREE PLACES.

E. THE FIRE BRICK PLANT HAS SUSTAINED SUBSTANTIAL STRUCTURAL DAMAGE TO TWO PRODUCTION BUILDINGS, HEAVY STRUCTURAL DAMAGE TO ONE SUPPORT BUILDING, AND SUPERFICIAL ROOF DAMAGE TO ONE SUPPORT BUILDING.

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F. THE FABRICATION/FOUNDRY AREA HAS HEAVY STRUCTURAL DAMAGE TO ONE SMALL FABRICATION BUILDING, AND TWO AREAS OF POSSIBLE MINOR STRUCTURAL DAMAGE TO ANOTHER FABRICATION BUILDING. ONE SUPPORT BUILDING WITH HEAVY STRUCTURAL DAMAGE AND ANOTHER SUPPORT BUILDING WITH SUPERFICIAL DAMAGE ARE OBSERVED.

G. IN THE ADMINISTRATIVE AREA, SUBSTANTIAL STRUCTURAL DAMAGE IS OBSERVED TO THE WEST WING OF ONE MULTISTORY ADMINISTRATION BUILDING. THREE SUPPORT BUILDINGS IN THE AREA HAVE SUSTAINED SUPERFICIAL ROOF DAMAGE.

H. ONE INTERDICTION WITH STRUCTURAL DAMAGE IS OBSERVED TO THE COVERED CONVEYOR SYSTEM LEADING FROM THE COKE OVENS TO THE BLAST FURNACE, AND ONE INTERDICTION WITH STRUCTURAL DAMAGE IS OBSERVED TO THE COVERED CONVEYOR SYSTEM LEADING FROM THE ORE STORAGE AREA TO THE BLAST FURNACE.

I. ADDITIONAL DAMAGE TO THE WAREHOUSE AREA AND RAIL YARD INCLUDES SUPERFICIAL DAMAGE TO EIGHT STORAGE BUILDINGS AND STRUCTURAL DAMAGE TO TWO OTHER BUILDINGS. THE RAIL SYSTEM HAS BEEN INTERDICTIONED IN AT LEAST TEN PLACES WITHIN THE COMBINE AREA.

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AT LEAST FORTY-SIX BARGES/SMALL RIVER CRAFT ARE APPARENT  
WITHIN THE FABRICATION AND OPEN HEARTH AREAS OF THE COMBINE AND  
IN THE LANG LAU BARGE CONSTRUCTION YARD NORTH OF THE COMBINE.

<sup>1</sup>CIA. IAD PIR 65112, MAY 1966, (CONFIDENTIAL)

<sup>2</sup>CIA/RR EM 64-34, OCTOBER 1964, (SECRET)

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POST-STRIKE



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IRON AND STEEL COMBINE, THAI NGUYEN, NORTH VIETNAM

21-33N 105-52E

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DAMAGED  
ROLLING MILL U/C

BARGE CONSTRUCTION  
AREA

BARGE CONSTRUCTION  
AREA

DAMAGED  
FIRE BRICK PLANT

DAMAGED  
OPEN HEARTH  
FURNACE BLDG

UNDAMAGED  
BLAST FURNACES

PRE-STRIKE

LANG LAU  
BARGE CONSTRUCTION YARD

THAI NGUYEN RR STATION  
YARDS AND SHOPS

CONTACT MOSAIC  
NPIC 1-3056 (5/67)

PREVIOUSLY DAMAGED AREA  
1ST STRIKE DAMAGE, IRON AND STEEL COMBINE

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